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Primary physical education: Shifting perspectives to move forwards

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Abstract

In recent years primary physical education has received increased attention across a range of political, professional and academic contexts. Much of this attention has largely been due to a growing perception that formative physical education experiences have the potential to address many of the concerns regularly raised about children's health and wellbeing, physical activity levels and sport participation. Consequently, there are now a number of stakeholders from a range of political, sporting, health, commercial and community groups with a vested interest in primary physical education; all with differing and sometimes contradictory views about its purpose. This paper suggests that the diverse interests of these stakeholders has led to disconnect within primary physical education. Therefore, we propose that a shifting perspectives agenda is required. Accordingly, we highlight the need for key stakeholders within primary physical education to collectively work together and take a lead role in advocating a shared educational vision. To inform this shifting perspectives agenda we employ complexity thinking and draw on professional capital (Hargreaves and Fullan, 2012). Within the paper we begin by offering a historical retrospective of the evolution of primary physical education. From this background we use complexity principles to reflect on the current state of primary physical education before exploring how complexity thinking, and ideas from professional capital, can help frame the enactment of this 'shifting perspectives' agenda. Finally, we suggest three key drivers to move the shifting perspectives agenda forwards: positive connections, the balance between key similarities and diversities, and self-organisation and recursive elaboration.

Keywords

Primary physical education, complexity thinking, connections, stakeholders, educational change

Introduction

After many years on the margins of the primary school curriculum, the recent signs for primary physical education have been more encouraging, as it begins to receive increased attention across societal, political, professional and academic contexts (e.g. Griggs, 2010; Petrie and lisahunter, 2011; Jess, McEvilly and Carse, 2016). This change in fortune is mostly due to the growing perception that formative physical education experiences have the potential to address many of the concerns regularly raised about children's health and wellbeing, physical activity levels and sport participation (Petrie and lisahunter 2011).

1 However, unfortunately research from across the world consistently reports problems with
2 the quality of primary physical education, identifying a number of interrelated teacher and
3 institutional factors contributing to this problem (Griggs 2007; Morgan and Bourke 2008;
4 Tsangaridou 2014). While we acknowledge these barriers, our recent work has focussed on a
5 more proactive stance, presenting complexity-informed ideas that seek to improve learning in
6 primary physical education and promote it as a foundation for children's lifelong engagement
7 in physical activity. Building on earlier complexity writing (Jess, Atencio and Thorburn,
8 2011; Jess, Carse and Atencio, 2013), over the past two years we have concentrated on the
9 design and subsequent application of a complexity-informed development framework for
10 primary physical education (Jess, Keay and Carse, 2016). This framework sets out the basis
11 for future development of primary physical education focussing on educational outcomes and
12 lifelong physical activity outcomes, where children are motivated, competent and confident
13 to be involved in physical activity throughout their life span (Penney and Jess, 2004). The
14 framework is composed of three interrelated components: primary physical education
15 curriculum and pedagogy; teachers and their professional learning, and the need to shift
16 perspectives of primary physical education to focus on education goals. This paper
17 specifically sets out to consider ways forward for the final component of this framework:
18 shifting perspectives, in particular those of the key stakeholders who influence primary
19 physical education developments across the micro, meso and macro layers of society, the
20 education and wider political systems.

21 Given the increased attention primary physical education has received and the ongoing
22 concerns about its quality; we have become conscious that the number of stakeholders with a
23 legitimate interest in primary physical education has increased markedly in recent years. This
24 now includes those from a wide range of political, sporting, health, commercial and

community groups as well as those from the education profession. While we recognise that the involvement of these different stakeholder groups will be key to the long term future of primary physical education, we are also conscious that their views often differ and are sometimes contradictory; for example, the sport and competition agenda visible in the current English curriculum (Department for Education, 2013) as opposed to the health and well-being goal in Scotland (Scottish Government, 2009). As such, given the traditional low status of primary physical education, aligned with an ongoing lack of clarity about the purpose of physical education in general (Kirk, 2010), we believe there is an urgent need for primary physical education to ensure its future development is clearly focussed on learning and educational goals (Jess, Carse & Keay, 2016).

However, with such a wide array of stakeholders now involved, we appreciate that progress towards this learning-focused education agenda for primary physical education will be a long-term, messy and potentially frustrating process. In particular, because the design and subsequent sharing of this view, alongside efforts to secure the emotional ‘buy-in’ of key stakeholders, will involve a ‘shifting perspectives’ agenda; an agenda that will need to be instigated by a physical education profession that for over half a century, has been more concerned with developments across the secondary school years (Jess and Thorburn, 2015). Consequently, it is to this complex ‘shifting perspectives’ agenda that the paper now turns.

Beginning with an explanation of the complexity-informed principles we will employ to inform this ‘shifting perspectives’ agenda, we then offer a historical retrospective of the evolution of primary physical education over the last 150 years. This historical section is an important part of the paper, as it helps develop an understanding of the factors and events that have shaped primary physical education into what it has become today. This background will enable us to then make use of complexity principles to first explore the current state of

primary physical education, before exploring how key principles can help frame and enact this ‘shifting perspectives’ agenda in the future. Complimentary to complexity thinking, we draw on professional capital (Hargreaves and Fullan, 2012) as we consider how to pull key stakeholders together around a shared educational vision for primary physical education.

Complexity thinking

In recent years, complexity thinking has become a more evident feature in the literature across different disciplines and professions, including the education profession (e.g. Davis, Sumara and Luce-Kapler, 2008). Concurrent with Biesta (2008), we suggest that complexity thinking offers a different way to view education because it helps us understand ‘order, structure, regularity, causality and permanence differently’ (p. 1). Contrary to a traditional view of systems made up of discrete parts that interact in a pre-determined, closed-loop manner, the key to complexity is the view that complex systems are a dynamic, adaptive and emergent phenomenon (Byrne, 1998). Complex systems consist of self-organising parts that produce both predictable and unpredictable outputs while concurrently interacting with each other to create much larger self-organising, nested systems (Morrison, 2003). Applying this complexity lens to education, children, classes, teachers, schools, policy makers, local and national governments, all are viewed as complex self-organising systems that interact with each other to create an adaptive education system simultaneously nested within the political system. From the many interactions within and beyond this nested education system, structure, order and predictability emerge, yet, because the multiple parts self-organise, there is also an inherent unpredictability within the system. The education system as a complex system is subsequently ‘inherently dynamic and transformational’ (Byrne, 1998, p. 51) with the potential to be unstable, open-ended and non-linear whilst also possessing structure and order.

Critically, the focus of complexity thinking is not solely on the system itself, but more on the ‘process of interaction between the elements’ that constitute the system (Ovens, Hopper and Butler, 2013, p. 2). Accordingly, we have found that ideas from ecological thinking help our understanding of this process of interaction because it focuses on the interaction between the individuals, tasks and the environment within the nested complex system (Jess, Keay and Carse, 2016). For example, applying this ecological view to primary physical education within the education system, it is possible to see how individuals (e.g. teachers, children, policy makers etc.) interact with tasks (e.g. physical education learning experiences) within an environment influenced by education, sport, health and leisure agendas. As these ecological elements of the system interact it is possible to see a ‘ripple’ effect, where each nested layer from the micro (classroom), meso (local) and macro (national/international) layers of the education system influence each other (Jess, Keay and Carse, 2016). Consequently, as we propose above, viewing these myriad interactions from a complex and ecological perspective contributes to our understanding of the dynamic, adaptive and emergent nature of primary physical education. However, before we draw on these key complexity ideas to explore the current situation and future possibilities for primary physical education, we present an historical retrospective of primary physical education over the last 150 years. This will help develop an understanding of those factors and events that have shaped the subject area into what it is today.

Primary physical education: then and now

In this section we explore the non-linear and somewhat messy evolution of primary physical education. We do this to describe, from an ecological perspective, how key macro-level events have consistently created an environment in which different groups of individuals have been presented with, or have actively created, opportunities to influence

both the purpose and direction of the subject within school settings. While this exploration will primarily use examples from the United Kingdom, reference will also be made to literature from other parts of the world as many of the issues raised are global in nature (see Hardman and Marshall, 2000). Building on this background, the section will finish by considering the current state of primary physical education, in order to set up the final section of the paper that will discuss how complexity principles can help frame the way in which a future ‘shifting perspectives’ agenda may be approached.

Historical developments

Physical education made its appearance as a school subject around the end of the 19th century when all children attended school for the first time. During the first half of the 20th century, with children’s formal education then stopping at age 14, physical education was predominantly a primary school subject delivered by female teachers (Nixon & Cozens, 1959). While other subjects were included in the school curriculum for their intellectual or cognitive contribution to children’s learning, physical education took its place because of concerns about the poor health and fitness levels of soldiers in the army (Kirk, 1992). Subsequently, although physical education has remained a universal feature of the primary curriculum, it has had some difficulty justifying its educational worth and has largely been positioned on the margins of the curriculum (Williams, 1989). This low status was not helped during the early part of the century when the subject was mostly depicted as physical training (PT) and delivered through a series of movement ‘drills’ from Swedish or German gymnastics (Kirk, 2001).

Following World War Two, with the school leaving age increasing to 15 and then 16, large numbers of male teachers entered the physical education profession. Consequently, as the focus quickly gravitated towards the subject’s contribution as a secondary school subject,

1 the curriculum became a contested domain. With governments offering little input to the
2 curriculum development process at this time, the physical education profession was primarily
3 in a position to develop the subject as it pleased (Thorburn and Horrell, 2011). Different
4 groups approached this task from a range of perspectives with the result that the curriculum
5 began to lack clarity and coherence (Goodson, 1987). In particular, the tension between the
6 more aesthetic and creative ‘movement education’ approach supported by the female side of
7 the profession (Laban and Lawrence, 1947) and the more scientifically-oriented games and
8 sports-oriented approach espoused by the males (Whitson and McIntosh, 1990) became a
9 feature of the subject’s evolution. Over time, as this scientific approach became known as
10 the ‘multi-activity’ curriculum (Kirk, 2005), it began to dominate in secondary schools while
11 the more progressive ‘movement education’ approach became a more prominent feature in
12 primary schools (e.g. North, 1973). Consequently, during this period, there was disconnect
13 between the focus of physical education in the primary and secondary sectors, although as the
14 century moved to an end the multi-activity approach began to dominate in both sectors (e.g.
15 DES, 1992).

16 As the profession’s focus on the secondary school years continued, developments in
17 primary physical education were to suffer. While there is evidence of some development
18 work in the latter part of the century, when developmentally appropriate practices influenced
19 the direction of primary physical education in North America (NASPE, 1992) and short lived
20 daily physical education projects were introduced in various countries (e.g. Pollatschek,
21 1987), the general lack of attention led to concerns being voiced about the overall quality of
22 physical education in primary schools (e.g. Warburton, 1989). Research regularly reported
23 issues with the teaching of primary physical education, such as the lack of specialist teachers
24 working in primary schools (PEA, 1987), the limited amount of initial teacher education and

continuing professional development for teachers (Kerr and Rodgers, 1981), and the low confidence levels of generalist class teachers to teach physical education (Garrett & Wrench, 2007). By the end of the 20th century, at both the macro and micro levels of the education system, global concerns about primary physical education were commonplace (Hardman and Marshall, 2000).

A revival

However, in the early part of the 21st century, primary physical education began to receive more attention in political, professional and academic arenas (e.g. HMIe, 2001). At the macro level, however, this revival was not based on the subject's perceived educational value, but more in the belief that physical education could help address growing concerns about children's health, obesity, physical inactivity and sport participation (Petrie and lisahunter, 2011). While this new attention may have helped to secure physical education's position in the primary curriculum for many years to come, the number of stakeholders taking a vested interest in the subject area has increased. Primary physical education now has politicians, policy makers, national organizations (both public and private), local authority management, school senior managers, health professionals, sport coaches, voluntary groups, parents/carers, the media and the general public all taking more interest in the subject and, critically, creating a more crowded and contested arena (Evans and Davies, 2014). Crucially, the debates within these arenas are now being increasingly played out in contexts where governments take a more neo-liberal view of education and where marketization, performativity and outsourcing are important drivers (Evans, 2013; Macdonald, 2011). From a physical education perspective, primary and secondary schools have increasingly become the settings where political agendas are being enacted (Penney, 2008) as health, sport and/or leisure agendas compete for space with educational aspirations (Houlihan and Green, 2006).

1 While these differing agendas have led to increased government funding, this money
2 has increasingly come from health and/or sport budgets and less from education (Petrie and
3 lisahunter, 2011; Evans and Davies, 2014). Consequently, these new inputs from different
4 stakeholders continue to highlight the ambiguous nature of primary physical education and
5 sustain concerns about the subject being 'positioned as a 'cure-all' for a range of social and
6 private ills (Ross and Burrows, 2003, p. 15). For example, as performativity agendas become
7 more common (Macdonald, 2014) and pressure increases to raise standards (Montague,
8 2012), there are concerns that skill-based and biomedical assessment approaches focused on
9 the measurement of body mass index, the identification of talented performers and cost
10 effective curriculum models will become common features of physical education's future
11 (Gard, 2008; Macdonald, 2011). An example of this more neo-liberal focus is apparent in
12 England where recent developments highlight a significant shift towards a competitive sport
13 agenda within physical education (Griggs, 2016).

14 In some countries, however, where governments seek to balance economic and social
15 justice objectives within education systems [for example, Sweden (Annerstedt, 2008) and
16 Scotland (Scottish Government, 2009)] health, sport and physical education outcomes are
17 viewed from a more holistic or salutogenic perspective (Quennerstedt, 2008). Viewing
18 health, sport and physical education outcomes from a more holistic perspective supports the
19 prospect of closer synergy between the different agendas currently present within primary
20 physical education. Having said this, the current political context has enabled the
21 commercial sector to become more involved in the provision of public service activities (Ball,
22 Maguire and Braun, 2012). Outsourcing of primary physical education to profit-making and
23 non-profit making enterprises has therefore become a more regular feature of both the

primary curriculum (Griggs, 2010; Powell, 2015) and the professional development of primary teachers (Harris, Cale and Musson, 2011; Pope, 2012).

Status of primary physical education

At the micro level of the education system, while this move towards more neo-liberal practice may be of some concern to physical education professionals (e.g. Evans, 2014; Macdonald, 2014), it represents an attractive solution to combat many of the barriers to quality physical education in primary schools (Griggs, 2010). While primary schools and primary teachers may remain the main deliverers of physical education, the status of the subject in many primary schools remains an issue. Many senior managers, teachers and parents continue to view physical education as a less important subject (Griggs, 2012), particularly in relation to English and Mathematics (Morgan and Bourke, 2008), and it is often considered to be a break from the ‘real’ work of the classroom (Pickup and Price, 2007). Further, it has also been reported that a lack of informed leadership and inadequate school planning contribute to insufficient curriculum time, a lack of support and inadequate resources (DeCorby et al., 2005; Morgan and Hansen, 2007). Linked to these issues, teachers’ professional learning continues to be an area of consternation. With reports of inadequate initial teacher education (ITE) now a constant in the primary physical education literature, (e.g. Blair and Capel 2011; Harris, Cale, and Musson 2011; Jones and Green 2015; lisahunter 2006; Tsangaridou 2014; Ward 2013), the professional learning opportunities for class teachers are also reported as being limited and limiting. For example, professional development opportunities tend to come in the form of ‘quick fix’ educational change packages (LeCompte 2009) characterised by short, one-off, off-site workshops delivered by perceived ‘experts’ (Armour and Duncombe 2004; Ward and Griggs 2011).

Although this approach to professional learning has been discredited as fragmented, disconnected from the ‘real’ school context and having limited impact on teachers’ and schools’ practices (Armour and Yelling 2004; Bechtel and O’Sullivan 2006; Guskey 2002), there are few examples of primary physical education professional learning focused on teachers’ deep, collaborative and long term learning (see, for example Parker, Patton, and Sinclair, 2016). As a consequence, Morgan and Bourke (2008) and others (e.g. Carse, 2015) have found that, in line with the teacher socialisation literature (Lawson 1983a and b), many class teachers simply reproduce their personal experiences of physical education as pupils in their own teaching of physical education. Given that many primary teachers will have experienced the scientific multi-activity approach in their own secondary schooling, it is common for watered-down versions of this approach to be ‘the norm’ in primary gymnasias (Ward and Griggs, 2011). However, with criticism of this dominant sport and games ideology now a regular feature within the physical education literature (e.g. Kirk, 2010), concerns about the appropriateness of this approach in the primary years is becoming more common.

Viewing primary physical education from this historical and ecological perspective has highlighted the messy evolution of the subject as key macro environmental events and groups of individuals have sought to influence the subject’s purpose and associated learning. From its early focus on drill and training, we have discussed how the second half of the 20th century saw primary physical education moved to the margins of primary schools **and** physical education in general. However, progressing through the current century, we have described how the re-emergence of primary physical education is proving to be a particularly complex process as, in a context of increasing neo-liberalism, a much wider range of key ‘nested’ stakeholders are now grappling to influence the future direction of the subject.

1 Subsequently, acknowledging the ‘messy’ and non-linear evolution of primary physical
2 education over more than a century, the final two sections of the paper will make use of
3 complexity principles to synthesise much of what has just been written in an attempt to make
4 sense of the current situation in which the subject finds itself and also set up a discussion
5 about a future shifting perspectives agenda for primary physical education.

6 **Applying a complex ecological lens to understand the status quo**

7 In beginning this section, it is important to stress that a key feature of the current
8 situation for primary physical education is its apparent revival within the political,
9 professional and academic domains. To make sense of this situation, we use ideas from
10 complexity thinking discussed earlier to examine this turn in fortune. Drawing on the
11 ecological frame, we explore how, in a context where the benefits of physical activity have
12 become widely acknowledged (the environment), the self-organising efforts of key
13 stakeholder groups across the nested education system (individuals) have resulted in different
14 views being presented about the nature of primary physical education (task). We also apply
15 the complexity principles of connectedness, similarity and diversity to discuss how the
16 interaction between these different views is contributing to disconnect within primary
17 physical education and consequently is in danger of returning the subject to the margins of
18 the primary school curriculum.

19 *The self-organisation efforts of key stakeholders*

20 To understand the self-organising nature of the different stakeholder viewpoints of
21 primary physical education we use the work of Phelps and Hase (2002), who suggest that as
22 groups self-organise and adapt to environmental conditions, they progress along a recursive
23 elaboration process (Davis and Sumara, 2010) that supports the development of their internal

1 schema as a conceptual framework. Applying this concept to primary physical education, we
2 suggest that key stakeholders (e.g. children, parents, teachers, coaches, politicians, policy
3 makers, health professionals and the media) have gone through this self-organising and
4 recursive process to develop internal conceptual models that make up the different schemas
5 that currently influence primary physical education. Reflecting on the historical background
6 of primary physical education and the status quo as outlined above, we propose that these
7 self-organised primary physical education schemas focus on a range of different agendas that
8 include:

- 9 • a health schema focussed on obesity and physical inactivity;
- 10 • a sport schema focussed on sport participation and/or talent identification;
- 11 • an education schema increasingly focussed on a hands-off approach to physical
12 education by the education sector that encourages greater input from the health and
13 sport sectors;
- 14 • a physical education schema focussed on the secondary school years and a narrative
15 depicting primary physical education as ‘broken’, and
- 16 • an education schema predominantly focussed on children’s literacy and numeracy,
17 often viewing physical education as a break from the ‘real’ work of the classroom.

18 These differing and potentially opposing schemas which increasingly appear to be
19 influencing the structure of the primary physical education landscape have emerged from
20 health, sport, education and physical education stakeholder groups, as well as from the media
21 and wider society. Viewing this through a complexity lens, it is possible to see how as each
22 schema attempts to provide a conceptual framework for primary physical education the

1 schemas compare and contrast against other which creates a situation of competition as they
2 jostle for position (Gell-Mann, 1995). Whilst acknowledging that the specifics will vary in
3 different contexts, we contend that it is both the nature of these schemas, and the interaction
4 between them, that has contributed to the piecemeal, fragmented and at times confusing
5 picture of primary physical education outlined earlier.

6 *Primary physical education and the interacting schemas*

7 Given the relational nature of complex systems, we now consider how the complexity
8 principles of connectedness, similarity and diversity can help with our understanding of the
9 current disconnected state of primary physical education. It is possible to see how recursive
10 connections between key elements of a complex system are central to the development
11 process because ‘new properties and behaviours emerge not only from the elements that
12 constitute a system, but from the myriad connections among them’ (Mason, 2008, p. 48).
13 However, while these recursive interactions may lead to the connectedness that supports a
14 system’s deep-rooted coherence across different contexts, weak or inappropriate connections
15 can result in disconnection, fragmentation and even extinction (Lewin, 1993). Reflecting on
16 the different schemas highlighted above, we contend that the long-term marginal positioning
17 of primary physical education has not only limited its connection with contemporary
18 educational goals, but has also weakened the connections between the schemas of the
19 different stakeholder groups. In agreement with Kirk (2005), we propose that these
20 disconnections have led to a lack of internal coherence within the subject.

21 To further explore this lack of coherence within primary physical education, we
22 employ the co-existing complexity principles of similarity and diversity. Within complex
23 systems, similarities and diversities are complementary constructs that operate reciprocally to
24 maintain the coherent functioning of the system (Davis, Sumara and Luce-Kempler, 2008).

1 Towards this end, while similarities are the common features of complex systems that bring
2 order and structure, diversities are the differences within the system that support the capacity
3 to be adaptable and creative across a range of contexts (Davis, Sumara and Luce-Kempler,
4 2008). Critically, as we now discuss, too much similarity leads to ‘sameness’ and limits the
5 system’s capacity to be adaptable in different contexts, while too much diversity leads to
6 fragmentation which also limits the efficiency and adaptability of the system (Hopper and
7 Sandford, 2010).

8 From the perspective of primary physical education, while we would not support the
9 idea that all teachers and schools deliver exactly the same physical education programmes,
10 reflecting on the points made above, we contend that too much diversity between each
11 different schema has led to a subsequent disconnect and fragmentation within primary
12 physical education. In particular, as the dominant health and sport schemas seem to
13 increasingly become the ‘norm’ for primary physical education, we assert that there is a
14 distinct possibility that primary physical education may soon become more disconnected
15 from the educational context within which it is currently situated i.e. the primary school
16 curriculum. While we acknowledge the important and valuable role health and sport schemas
17 must play in the future of primary physical education, we argue that the diversity between the
18 different, competing schemas is inhibiting the development of a shared vision to support the
19 ongoing development of the subject area. To function effectively and bring order and
20 consistency primary physical education requires a clear purpose. Moreover, in pursuit of this
21 order, flexibility must be built into the vision to allow for adaptability and creativity in
22 response to ever changing environmental, individual and task demands. Critically, there is a
23 need to balance the degree of similarity that leads to sameness and limited adaptability, and
24 too much diversity that can ‘lead to chaotic actions and disconnect’ (Hopper and Sandford,

2010 p. 134). With this in mind we now apply a complexity lens to examine how to enhance children's learning experiences in primary physical education by placing greater emphasis on educational aspirations and how to begin to enact a shifting perspectives agenda.

Primary physical education, complexity and shifting perspectives

This paper has highlighted how the primary physical education status quo has become increasingly disconnected and fragmented as different schemas from health, education and sport wrestle to influence the nature of the subject area. While the debates across the extended policy arena may have helped raise the profile of primary physical education in many countries, these debates have also raised important questions about the long-term ownership and control of the subject area amidst reports of limited involvement by the education sector (Petrie and Lisahunter, 2011) and increased outsourcing of provision (Griggs, 2010). Consequently, the challenge for primary physical education in the years to come is to establish a subject area that is characterised by a coherent educational vision shared within, across and beyond the education sector (Jess, Keay and Carse, 2016). If educational concerns are to become the underpinning 'raison d'être' of primary physical education, we suggest that all stakeholders, particularly those from physical education, need to engage more collectively and effectively with the complexities of the education and wider political systems. In an attempt to address this challenge, in the final section of this paper we present our thoughts on how to move the shifting perspectives agenda forwards. In doing so we consider the process of educational change through a complexity lens (Fullan, 1999) and in relation to the concept of professional capital (Hargreaves and Fullan, 2012). Accordingly, we present three key drivers, we believe have the potential to support a long term shifting perspectives agenda. The three drivers are:

1. Positive connections

2. The balance between key similarities and diversities

3. Self-organisation and recursive elaboration

Using these drivers, we will outline our vision for how to mobilise the shifting perspectives agenda, and consolidate the position of primary physical education within the education system and wider society.

Positive connections

Developing a coherent and robust educational view of primary physical education that can be shared across and beyond the education system is not a simple undertaking and will require the development of many positive connections across nested levels (micro, meso and macro). As such, we take the view that key stakeholders (e.g. children, teachers, coaches and parents as well as politicians, policy makers and the media) at all these nested levels should have the opportunity to make a contribution to the development of this shared educational vision. This reflects Fullan's (1999) argument of the need for top down and bottom up change; he highlights that 'neither top down nor bottom up strategies by themselves can achieve coherence - the top is too distant and the bottom is overwhelmed' (p. 27). Therefore, he suggests the need for intermediaries to act as 'integrators and synthesisers', to connect the levels within the system (Fullan, 1999, p.27). If primary physical education is to consolidate its position within education, we are of the view that the physical education profession, which includes teachers, teacher educators, academics and professional associations, will need to come together to act as collective 'synthesisers' of this shifting perspectives agenda. In particular, as we have indicated elsewhere (Jess, Keay and Carse, 2016), there is a need for a more integrated bottom up and top down approach based on primary physical education curriculum, pedagogy and professional learning projects at the micro level acting to build the

1 capacity and momentum to support the shifting perspectives agenda at the national macro
2 level.

3 We propose that a potential starting point for this shifting perspectives agenda is the
4 key stakeholders from within the physical education profession coming together and working
5 strategically to design, articulate and share a clear educational vision for primary physical
6 education. This coming together has the potential to develop professional capital which
7 Hargreaves and Fullan (2012) assert is an essential element of enabling the teaching
8 profession to lead innovation within the education system. Professional capital involves
9 continuous improvement over time undertaken collaboratively, leading to the development of
10 wise judgment (Hargreaves and Fullan, 2012); we consider that this is what is required to
11 create the shifting perspectives agenda and ensure it reaches beyond education particularly to
12 wider society which includes parents and the media. We envisage "using the group to change
13 the group", this process of change will require a combination of 'pushing', 'pulling' and
14 'nudging' to move it along (Hargreaves and Fullan, 2013, p. 37).

15 We assert that the increased academic work and research around primary physical
16 education emerging from universities in recent years (e.g. Jess, Keay and Carse, 2016;
17 Griggs, 2012; Petrie, 2016) could provide an initial 'push' to assert the educational argument
18 for physical education. Building on this initial push, and because change cannot be pursued
19 in a vacuum, there is a need to pull the physical education profession together into this
20 educational vision. Therefore, to support the enactment of the shifting perspectives agenda
21 within schools, communities and wider society, it is crucial that universities seek to develop
22 partnerships and networks within and beyond the physical education profession (Jess and
23 Thorburn, 2015). To support this pull, we envisage professional associations having a central
24 role as advocates for primary physical education because they have the potential to: represent

1 the profession; engage with fellow educators, professionals parents, the media and the public;
2 and negotiate the complexities of the policy arena (Hargreaves and Shirley, 2009). Moreover,
3 throughout the process of shifting perspectives regular nudges will be required to maintain
4 momentum and guide stakeholders in a similar direction. As such, we envisage this agenda
5 as an integrated, recursive and non-linear process that is initiated by the academic and
6 research work that acts as the foundation to help professional associations and teachers nudge
7 the complex change process forward.

8 *Balancing similarities and diversities*

9 In developing this shared vision for primary physical education, we contend that
10 emphasising educational and learning goals has the potential to highlight similarities between
11 the health, sport and education schemas and concurrently connect key stakeholders. In
12 particular, we perceive moral purpose (Fullan, 1999) as the main 'pulling' factor in the
13 development of this shared educational vision. At the micro level, Fullan (1999) maintains
14 that moral purpose means 'making a difference in the life-chances of all students' while at a
15 macro level it is 'education's contribution to societal development and democracy' (p. 1).
16 Accordingly, we propose that moral purpose should overtly underpin an educational vision
17 for primary physical education so that it can make a more positive impact on children's lives
18 and contribute more widely to society. The physical education profession has a central role
19 to play in the development and sharing of such an educational vision. Acting as synthesisers
20 the physical education profession have the potential to simultaneously guide thinking and
21 action at the nested levels of the system whilst also encouraging the different stakeholders to
22 be responsive to their local contexts as the shared vision develops (Fullan, 1999).

23 From a complexity perspective this shared education vision has the potential to bring
24 some order and consistency to primary physical education, but too much similarity can lead

1 to stagnation (Morrison, 2003). Accordingly, we emphasise the need for a balance between
2 similarities and diversities, particularly as diversity and conflict are essential features within
3 the education system (Fullan, 1999). Correspondingly, we are not suggesting that current
4 schemas around primary physical education are wrong, they have a valuable contribution to
5 make towards moving primary physical education forward. Moreover, in creating a shared
6 vision for primary physical education, it should be recognised that diversity is important for
7 the survival and growth of complex systems. Indeed Stacey (1996) cautions against
8 removing the messiness inherent within complex systems as this supports creative and
9 diverse thinking. From this complexity perspective we suggest that much can be learned
10 from the current dissonance within the system, particularly in relation to making connections
11 and incorporating different perspectives around a shared vision of primary physical
12 education, underpinned by education and learning goals.

13 *Self-organisation and recursive elaboration*

14 Our final driver builds on Fullan's (1999) suggestion that complexity helps us
15 understand that the education system cannot be controlled, but that it is possible to influence
16 the trajectory of the system. As such, we recognise that a shifting perspectives agenda for
17 primary physical education cannot and should not be micro-managed. However, we argue
18 that positively harnessing self-organisation and recursive elaboration at the teacher and
19 school level could positively influence the shifting perspectives agenda, and shared
20 educational vision we propose, nudging them forwards. Our earlier analysis of the status
21 quo, highlighted how the processes of self-organisation and recursive elaboration contributed
22 to creating differing schemas around primary physical education. Therefore, we argue that in
23 attempts to shift perspectives in the future it is important to consider the potential of these
24 processes, which are inherent aspects of complex systems.

1 In this respect, the physical education profession need to be encouraged and supported
2 to work in a collaborative, self-organising and recursive manner; to create localised schemas,
3 across all nested levels, that connect to a clear educational vision for primary physical
4 education. As mentioned earlier, we contend that it is bottom-up curriculum, pedagogy and
5 professional learning initiatives of this nature (Jess, Keay and Carse, 2016) that will generate
6 the structure, order, adaptability and creativity to ultimately strengthen this educational view
7 of primary physical education. Harnessing self-organisation and recursive elaboration in this
8 way has the potential to contribute to the development of professional capital. Through
9 professional capital teachers in particular will be better placed to make a significant
10 contribution to the shifting perspectives agenda, as they move from ‘implementers’ to
11 influencers of policy and curriculum. Consequently, this shifting perspectives agenda for
12 primary physical education is not about creating a dominant agenda to be prescriptively
13 followed, but instead advocates an educational vision that: offers a robust theoretical
14 underpinning; places moral purpose front and centre, and respects the similarities and
15 diversities of all stakeholders.

16 **Conclusion**

17 This paper has considered how key principles from complexity thinking have helped
18 us investigate the status quo of primary physical education and present a shifting perspectives
19 agenda for the future. Building on an historical review of the key factors that have shaped the
20 evolution of primary physical education over the last century, principles from complexity
21 have helped us make sense of the ambiguous, messy and potentially precarious state of the
22 subject today. In particular, we have highlighted that, while primary physical education is
23 currently receiving much more attention, it is the different schemas being advocated by key
24 stakeholders from within and outside education that are creating a school subject that is

1 becoming increasingly disconnected and fragmented. Consequently, we propose that it is
2 incumbent on the physical education profession to re-focus its development efforts, locally,
3 nationally and internationally, to concentrate on the development of a strategic, long term
4 shifting perspectives agenda aimed at uniting the key stakeholders in a shared vision for the
5 future of primary physical education. 'This represents an acknowledgment that both agent
6 interaction and the schemas of these agents are critical in processes of change' (Phelps and
7 Hase, 2002, p. 6) From a complexity perspective, we propose that this shifting perspectives
8 agenda will be best served by focusing on three key drivers - positive connections, balancing
9 similarities and diversities, and supporting a process of self-organisation and recursive
10 elaboration - to enable the emergence of a coherent educational vision of primary physical
11 education that collectively sets the foundation for children's lifelong engagement in physical
12 activity (Penney and Jess, 2004).

13 There is no doubt that primary physical education is very much at the crossroads. One route
14 may see its ongoing fragmentation and ultimate extinction while the other offers an
15 opportunity to consolidate and extend its position as a key feature of the primary curriculum.

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